

REMARKS

Claims 29-56 are now in the application. By this Amendment, claims 29, 30, 34, 35, 38, 45, 46, 49 and 53-56 have been amended for clarification and in response to requests in the Office Action, but not to limit the scope of these claims. Claim 36 has been canceled without prejudice or disclaimer. No new matter has been added.

Claims 29-36, 38, 45, 46, and 53-56 have been rejected under 35 U.S.C. §112, second paragraph, for allegedly being indefinite. The Office Action asserts that the claim feature “some” is a relative term. Claim 29 is amended to obviate this rejection. Claim 36 has been canceled and the rejection is moot as to this claim. Claims 30-35 do not recite the claim feature “some.”

Claims 45 and 46 have been rejected because the claim feature “obtainable” allegedly renders these claims indefinite. Claims 45 and 46 have been amended to obviate this rejection.

Claim 38 has been rejected because the claim feature “arbitrary” allegedly renders this claim indefinite. Claim 38 is amended to obviate the rejection.

Claims 34-36 and 52-56 have been rejected under 35 U.S.C. §101 for reciting a “use.” Claims 34-35 and 53-56 have been amended to obviate this rejection. Claim 36 has been canceled and the rejection is moot as to this claim. The rejection of claim 52 is believed to have been made in error because this claim does not recite a “use.”

Claims 29 and 32 have been rejected under 35 U.S.C. §102(b) as being anticipated by Piepho et al. (U.S. Patent No. 5,089,586). Claims 30-31 have been rejected under 35 U.S.C. §102(b) as being anticipated by, or, in the alternative, under 35 U.S.C. §103(a) as being obvious over Piepho.

The Office Action asserts that Piepho can reasonably be considered to suggest features corresponding to a process for the preparation of a polyether-urethane which comprises, in incorporated form, "at least one polyether which comprises a group reactive toward isocyanate groups, and an allyl group" and "at least one polyisocyanate," as positively recited in claim 29. This assertion is incorrect.

Piepho suggests, at col. 1, line 65 to col. 2, lines 6, that a polyglycol mixture is reacted with a hydroxyallyl compound and a compound containing at least two NCO groups. Accordingly, the product obtained in the process suggested in Piepho contains an allyl group that is bound to a polyisocyanate. Piepho fails to suggest that the allyl group is bound to the polyglycol and that this allyl group/polyglycol adduct has a hydroxyl group being capable of reacting with polyisocyanate. Consequently, the reaction product suggested in Piepho is structurally different from a polyether-urethane according to claim 29:

Claim 29: (allyl-group)-polyether-polyisocyanate-...

Piepho: (allyl-group)-isocyanate-polyglycol-...

Thus, Piepho cannot reasonably be considered to have suggested the features that the Office Action attributes to this citation.

Further, the Office Action asserts that Piepho can reasonably be considered to suggest features corresponding to an isocyanate group-comprising prepolymer, as recited in independent claim 29. However, Piepho suggests, at col. 4, lines 31-48, that isophorone diisocyanate and trimethylolpropane diallyl ether are reacted in a single production process stage. Specifically, Piepho suggests, at col. 3, lines 62-66, that this production process stage is performed until completion of the reaction, as indicated by the disappearance of the NCO signal in the infrared spectrum. In other words, Piepho suggest that after addition of the isocyanate compound the reaction is carried out in one single stage to produce a urethane. Thus, Piepho cannot reasonably be considered to have suggested the above-quoted feature of claim 29.

In addition, Piepho cannot reasonably be considered to suggest features corresponding to "a ratio of isocyanate group equivalents to equivalents of groups reactive toward isocyanate.

groups in a range from 1.5:1 to 2.2:1,” as recited in claim 29. Instead, Piepho suggests an excess of hydroxyl groups with respect to isocyanate groups. As set forth at col. 2, line 50, the starting product A contains 0.15 mol hydroxyl groups. These 0.15 mol of hydroxyl groups are reacted, as set forth at col. 4, lines 37-40, with 0.144 mol trimethylolpropane diallyl ether (containing one free hydroxyl group per molecule) and 0.144 mol isophorone diisocyanate (containing two isocyanate groups per molecule). Thus, Piepho suggests reacting 0.288 mol isocyanate groups with 0.294 mol hydroxyl groups, i.e., a ratio of approximately 0.98:1. Such a disclosure cannot reasonably be considered to correspond to the above-quoted features of claim 29.

Claims 29-32 and 34-36 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Watson (U.S. Patent No. 4,246,391) in view of Carter et al. (U.S. Patent No. 3,042,725).

As acknowledged in the Office Action, Watson suggests a procedure for producing acrylated urethanes. Watson fails to suggest urethanes containing an allyl group. The Office Action relies on Carter for allegedly suggesting a polyether which comprises a group reactive towards isocyanate groups, and an allyl group, as recited in claim 29. However, Watson and Carter may not be combined in the manner suggested because the combination would render Watson unsatisfactory for its intended purpose. As set forth in MPEP §2143.01 V, “[i]f proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification.” *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). Watson suggests photo-curable acrylated polyurethanes. Carter suggests, at col. 1, lines 29-33, polyurethane elastomers that are not photo-curable, but have to be vulcanized by the conventional methods for curing rubber, such as using sulfur or peroxides. Thus, the combination of Watson and Carter results in a polymer that is unsatisfactory for the intended purpose of providing a photo-curable polymer.

In addition, even if combined, Watson and Carter do not suggest all of the features of claim 29. For example, Watson suggests, at col. 2, lines 58-61, that the ratio between hydroxyl groups and diisocyanate groups is 1 to 1. Such a disclosure cannot reasonably be considered to

correspond to “a ratio of isocyanate group equivalents to equivalents of groups reactive toward isocyanate groups in a range from 1.5:1 to 2.2:1,” as recited in claim 29. Further, Watson suffers from the same deficiency as Piepho as discussed above because Watson fails to suggest features that can reasonably be considered to correspond to an “isocyanate group-comprising prepolymer.” Instead, Watson suggests, at col. 3, lines 42-58, that the reaction mixture was stirred and heated for seven hours to produce an acrylate capped urethane, i.e., a compound without NCO groups.

Claims 34-36 have been rejected under 35 U.S.C. §102(b) as being anticipated by Piepho in view of Carter. Claim 36 has been canceled. Accordingly, the rejection is moot as to this claim. With regard to claims 34 and 35, MPEP §2131 sets forth that to anticipate a claim, the reference must teach every element of the claim. This standard has not been met by the Office Action. Specifically, a “claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987). (Emphasis added). Thus, the subject matter of claims 34-36 is not anticipated by the applied citations because the Office Action has to rely on the application of Piepho and Carter for allegedly suggesting all of the features recited in these claims.

Claims 29-44, 46 and 49-56 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Watson in view of Carter and further in view of Kim et al. (WO 99/58100), as evidenced by corresponding U.S. Patent No. 6,579,517.

The application of Watson and Carter fails for the reasons set forth above. Specifically, as acknowledged in the Office Action, Watson fails to suggest features that can reasonably be considered to correspond to a “polyether which comprises at group reactive toward isocyanate groups, and an allyl group,” as recited in independent claims 34 and 37. Carter may not be combined with Watson because the proposed modification would render Watson unsatisfactory for its intended purpose. Kim is not applied in a manner to cure the deficiencies of Watson and Carter.

Claims 45, 47 and 48 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Watson in view of Carter and Kim, and further in view of Dieing et al (WO 00/49998).

For the reasons set forth above, the combination of Watson, Carter and Kim cannot reasonably be considered to suggest the combination of all of the features of independent claim 37. Dieing is not applied in a manner to cure the deficiencies of Watson, Carter and Kim, as discussed above.

Applicants note that in the corresponding Japanese application to this application, an Office Action has issued, which makes a rejection over the corresponding Japanese application of WO 00/12588. U.S. Patent No. 6,524,564 to Lee et al., is the U.S. counterpart to WO 00/12588 and the corresponding Japanese application. Applicants concurrently herewith submit an Information Disclosure Statement forwarding U.S. Patent No. 6,524,564 for the Examiner's consideration.

It is respectfully submitted that U.S. Patent No. 6,524,564 (hereinafter "Lee") cannot reasonably be considered to suggest the combination of all of the features of independent claims 29, 34 and 37. Specifically, Lee teaches urethane polymers comprising (meth)acryloyl groups as moieties comprising unsaturated double bonds, whereas claims 29, 34 and 37 each recite allyl groups. Further, as set forth above, a polymer according to the independent claims have the following structure: (allyl-group)-polyether-polyisocyanate-... Lee teaches that the moieties comprising unsaturated double bonds, i.e., the (meth)acryloyl groups, are bound in the following manner: (meth)acryloyl-diisocyanate-polyether-... Thus, Lee cannot reasonably be considered to have suggested the combination of all of the features of independent claims 29, 34 and 37.

In view of the above, reconsideration and allowance of the pending claims are respectfully solicited.

In the event the Examiner believes an interview might serve in any way to advance the prosecution of this application, the undersigned is available at the telephone number noted below.

Applicant concurrently herewith submit the fee for a Petition for a two month extension of time. Applicants believe no additional fee is due with this response. However, if any additional fee is due, please charge our Deposit Account No. 03-2775, under Order No. 13111-00022-US from which the undersigned is authorized to draw.

Dated: May 5, 2008

Respectfully submitted,

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